

Patent claims

1. Metalliferous electrode material at least for secondary elements characterized in that the metalliferous electrode material includes at least one metal oxide as catalyst for the hydrogenation or dehydrogenation.

2. Metalliferous electrode material according to claim 1, characterized in that the metal oxide is a mixed oxide.

3. Metalliferous electrode material according to one or both of claim 1 or 2, characterized in that the metal of the metal oxide is a rare earth metal.

4. Metalliferous electrode material according to one or several of claims 1 to 3, characterized in that the metal has a nanocrystalline structure.

5. Metalliferous electrode material according to one or several of claims 1 to 4, characterized in that the catalyst has a nano-crystalline structure.

6. Method of producing a metalliferous electrode material at least for secondary elements according to one or several of claims 1 to 5, characterized in that the metalliferous material, and/or the catalyst is, or respectively are, subjected to a mechanical grinding process.

7. Method according to claim 6, characterized in that the grinding process is performed for a predetermined time.

8. Method according to one or both of claim 6 or 7, characterized in that the metalliferous material is first subjected to said grinding process and the catalyst is subsequently added to the grinding process.

9. Method according to one or both of claims 6 or 7, characterized in that the catalyst is first subjected to the grinding process and the metalliferous material is subsequently added to the grinding process.

10. Method according to one or more of claims 6 to 9, characterized in that the grinding process is performed in a protective inert gas atmosphere.

11. Method according to claim 10, characterized in that the inert gas is argon.

12. Method according to one or several of claims 6 to 11, characterized in that the duration of the grinding process is in the range of 1 to 200 hours.

13. Method of manufacturing a metalliferous electrode material usable as an electrode material at least for secondary elements, according to one or more of the claims 1 to 5, characterized in that at least one metal oxide is formed at least

on the surface of the electrode material in situ by contact with oxygen from elements of the electrode material or by direct admission.

14. Method according to claim 13, characterized in that the surface of said electrode material is chemically activated before being exposed to the oxygen for forming the oxide.

15. Method according to claim 14, characterized in that the surface of the electrode material is mechanically activated before it is exposed to the oxygen to form the oxide.

*The undersigned has prepared the translation and certified that it is an accurate translation*

*K. Bach 26832*